Solution of a Boundary Value Problem Connected with the Fokker–Planck Equation

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A Bessel-type solution of the Fokker–Planck equation is derived from the well-posed boundary value problem arising in nonequilibrium statistical mechanics. We utilize the Laplace transform. The general solution is in the form of an infinite series. Critical comments are made on nonconstant and constant diffusion Fokker–Planck equations; stochastic quantization and detailed balance in Fokker–Planck dynamics.

On Existence and Uniqueness of Solutions of Stochastic Nonlinear Integrodifferential Equations

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The present paper is concerned with the existence and uniqueness of solutions of stochastic nonlinear integrodifferential equations of the form

$$\frac{dx(t;w)}{dt} = f(t, x(t;w), w, \int_{t_0}^{t} k[t, s, x(s;w), w]\,ds)$$

under some suitable conditions on the functions involved.